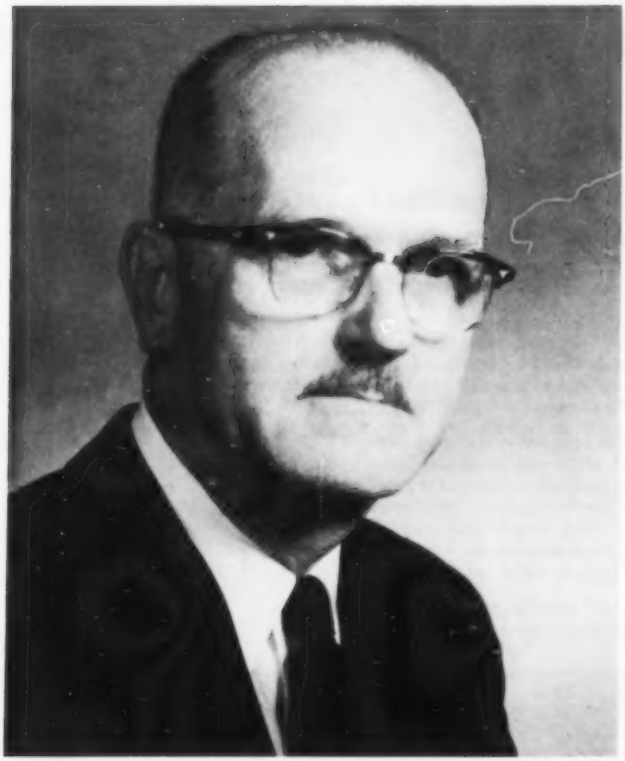
February, 1957

THE CHEMIST

VOLUME XXXIV NUMBER 2



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Dr. W. George Parks
Receives Honorary AIC Membership
(See Page 47)

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SCHEDULED FOR EARLY PUBLICATION

Sixteen Years of Chemical Education in China, Dr. Peter P. T. Sah
Should Consulting Engineers Advertise? (Reprint), Richard L. Moore, F.A.I.C.
The Chemist, the Industry and National Defense, Simon Askin.
The Relationship of Scientific Manpower to the Future Economic Prosperity and Security of the Nation, D. H. Dawson.
Award of Pennsylvania Chapter Honor Scroll to Dr. Charles L. Thomas, F.A.I.C.
On Being a Real Chemist, Dr. Charles A. Thomas, F.A.I.C.

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New Deadlines for *The Chemist*

At the request of several AIC members, we are trying to move the publication date of THE CHEMIST from its customary position at the end of the month to the first of the month. To do this with the least disruption to printing schedules, THE CHEMIST will be brought out a few days earlier each month, beginning with this February issue, until it achieves our purpose. This requires new deadlines for all copy. Please note that copy intended for the April issue of THE CHEMIST must be in our hands by March 15th, at the latest, but earlier, if possible.

TO COME IN MARCH

Dr. Charles L. Thomas, F.A.I.C., director of research and development of Sun Oil Company, urges research administrators to "help the real chemist and see that he gets the recognition and the reward for it." He received the Honor Scroll of the Pennsylvania AIC Chapter. • "The Chemist, the Industry, and National Defense", a paper by Simon Askin, president of Heyden Chemical Corp., contains much vital information about the chemical industry.

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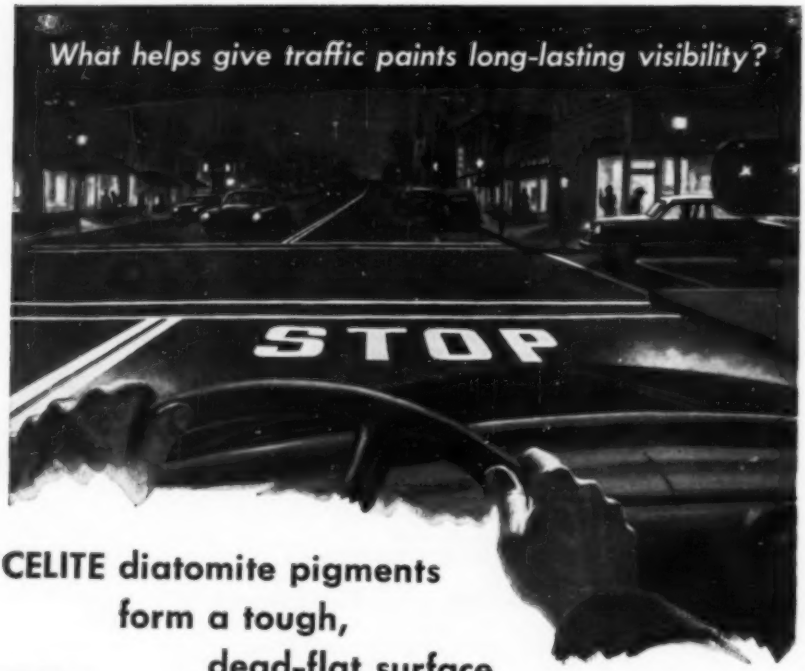

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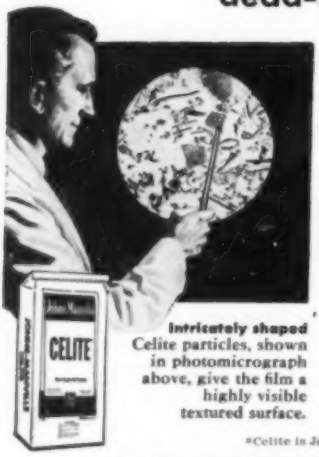

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EDITORIAL

These Are Our Objectives

What is the function of THE AMERICAN INSTITUTE OF CHEMISTS? Laymen or non-members logically ask this question when talking about it to AIC members. The simplest and most complete way to reply would be to show the inquirer the objectives printed below. (An extra copy of the Objectives will be supplied to anyone who requests it.)

(1) To provide and enforce a code of conduct which merits public esteem and justifies confidence in the integrity of the Chemist and Chemical Engineer;

(2) To establish and maintain a standard of proficiency of such excellence as to insure competent and efficient service.

(3) To secure an adaquate basic training for these professions and admit to fellowship in the Institute only those of proved education, experience, competency and character;

(4) To enhance the prestige and distinction of the professions and to extend their influence and usefulness;

(5) To establish and maintain a register of its membership in which there shall be a complete record of the training, experience and fitness for service of each individual member;

(6) To improve the economic status of the professions by cooperating with employers and the public to secure a satisfactory appreciation and evaluation of the services of the Chemist and Chemical Engineer;

(7) To provide means for appropriate recognition of distinguished service to the professions;

(8) To cooperate with all the agencies serving chemistry to make the professions of chemist and chemical engineer powerful factors in the advancement of intellectual and material progress in the United States of America;

(9) To lend support to the work of the chemical societies in the education of the public to a better appreciation of the contribution of the Chemist and Chemical Engineer to world progress;

(10) To render such other services to the professions as developments shall warrant and The American Institute of Chemists shall approve.

Special AIC Announcements

Twin City Chapter Elects

The newly-organized Twin City Chapter of THE AMERICAN INSTITUTE OF CHEMISTS has elected the following officers:

Chairman, Albert C. Holler, 3514 Taylor St., N.E., Minneapolis 23, Minn.

Chairman-elect, Morris Kenigsberg, The Toni Co., 332 Rosabel St., St. Paul 1, Minn.

Secretary, Harold A. Johnson, 7433 Clinton Ave., So., Minneapolis 23, Minn.

Treasurer, Dr. Joseph F. Abere, 2053 Floral Drive, Gardenette Park, White Bear Lake 10, Minn.

National Council Representative, Dr. John L. Wilson, 2101 Dudley Ave., St. Paul 8, Minn.

Alternate National Council Representative, Hugh A. Hamilton, 5124 Luverne Ave., Minneapolis 19, Minn.

Honorary Membership For Lawrence Flett

Honorary AIC Membership will be presented to Lawrence H. Flett, former president of the AIC, at a dinner meeting of the New York Chapter, to be held March 11, 1957, at the Hotel Commodore, New York, N.Y.

Booklet About AIC Activities

A booklet about some of the achievements, activities, and programs of THE AMERICAN INSTITUTE OF CHEMISTS is being prepared. The AIC Secretary has written to the Chapters asking them to supply him with specific information about their accomplishments.

AIC members are invited to send in their comments about things achieved and to suggest programs for the future. When completed, this material will be first published in THE CHEMIST, so that all members will have an opportunity to read it.

AIC Lapel Buttons

Lapel buttons of the AIC, with gold-plated centers circled by a band of green enamel, are available at $1.00 each. They may be obtained by AIC members from the secretaries of the Western, Chicago, and New York Chapters, or from the national AIC secretary.

Dr. Hildebrand to Receive Honorary Membership

Dr. Joel H. Hildebrand, professor emeritus, University of California, will receive Honorary AIC Membership at a meeting of the Western Chapter, to be held March 28, 1957, in Los Angeles, Calif. AIC President Nair will present the certificate of Honorary Membership to Dr. Hildebrand.

The U.S. Delegation: To the symposium on the organization of applied research, held in Vienna, Austria, October 8-12, included Dr. Norman Shepard, F.A.I.C., and Dr. Lawrence Bass, F.A.I.C. The Organization for European Economic Cooperation sponsored the symposium.

Starting Salaries: Reported by the Bureau of Placements at Carnegy Institute of Technology, Pittsburgh 13, Pa., were at a median of $425 per month for 1956 B.S. graduates, or about $40 a month more than last year.

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The Chemist and Education

Dr. W. George Parks, Hon. AIC

Professor and Head of the Department of Chemistry, University of Rhode Island, Kingston, Rhode Island.

(Presented when the author received Honorary AIC Membership at a meeting of the New England Chapter, Oct. 31, 1957, at Cambridge, Mass.)

I SHALL discuss the problem facing American education and, specifically, the inadequate supply of technical personnel, in this case, chemists. The Bureau of the Census, U.S. Department of Commerce, tells us that the number of persons of college age is now at its lowest point in twenty-five years. On July 1, 1956, there were approximately 15.2 million persons 18-24 years old. This group has been declining slowly from its peak, 1943-44, of about 16.9 million. Between 1960-1965 the group will grow quite rapidly, gaining, on the average, about 4% per year during this period. By 1965, it is estimated that persons of college age will number one-third more than at present. This group will continue to grow at a relatively rapid rate, and by 1973, when the past year's births reach college age, it will be larger than at present by an estimated 75%. It may be stated another way, for every four persons now of college age, there will be three additional persons by 1973. The effect that this increase in students will have on the future of American education is one of the most widely discussed questions. The increase in enrollment will present a number of serious problems to our schools and colleges. More buildings will be required with larger appropriations of money. The outstanding problem, however, is that of securing enough really qualified teachers, because they will determine the quality of future education.

The children already born will tax our educational system for twenty years, regardless of the future level of births. The elementary schools and the secondary schools are already overcrowded. It is estimated that the elementary enrollment is 30% above that of 1955, and that the secondary school enrollment will be 70% above the 1955 level by 1969 because of the children already available. As already stated in another way, it is expected that college enrollment will double within fifteen years.

The Problem of Teachers

A survey completed by the Fund for the Advancement of Education shows that to maintain the present pupil-teacher ratio, the schools will have to enlarge their teaching staff more in the next ten years than in the previous thirty-five. The colleges and universities will have to add more teachers in the next fifteen years than in all previous history combined. There will need to be one-half million more school teachers

on the job in 1965 than today. (This estimate assumes one teacher for every 30 elementary pupils and one for every 25 secondary students.) The problem is not only one of recruiting new teachers annually for expansion, but also it is necessary to replace those teachers who leave—to get married, raise children, take non-teaching jobs, retire, or for other reasons. At the college level the problem is even more serious. The replacement rate is estimated at only 4%, considerably lower than in the schools, but the growth of enrollment is expected to be relatively greater. If the present student-teacher ratio of 13 to 1 is to be preserved, for every ten college teachers now employed, somewhere between 16 and 25 new ones will have to be found between now and 1970. Here the question is not so much whether we can get enough persons to teach, but can we get enough qualified teachers. There are difficulties in defining or measuring qualities in a teacher. However, it is obvious that a qualified teacher must be well-educated and intelligent. A college degree does not always make a good teacher, and all qualified teachers do not have college degrees. However, our main source of qualified new teachers is from our college graduates. This situation is not very encouraging, because it is estimated that it would take one-half of all college graduates over the next ten years to meet our needs for new teachers. At the present time about one-fifth of our college graduates enter the teaching profession, either on the elementary or secondary school level. The need for new college teachers will far exceed the supply of new Ph.D.'s. The statistics are available to indicate that in the 1930's approximately 6 out of every 10 new Ph.D.'s entered college teaching. There is no doubt that in the future this ratio will decline because of competition from industry.

What can we do to solve the problem of this tremendous change which will be forced upon American education during the next twenty years by the pressure of numbers and the shortage of teachers? If we continue the present recruitment, training, and utilization of teachers, we can almost expect a decrease in the quality of education. There are many conditions for attracting and holding able persons as teachers. There are three that are always emphasized: (1) The salary must be increased. The salary must be sufficiently high and flexible to compete effectively for quality. (2) The prestige and status of the teacher must be on the same high level as the other professions in the eyes of the community, the teacher and individuals choosing a career. (3) The teacher's work must be so organized as to challenge and utilize the ability of capable individuals.

The Fund for the Advancement

of Education published some interesting statistics on the average annual earnings in various occupations for the year 1953. Please note the several comparisons in this table:

TEACHING	
Professors in large State Universities	$7,000.00
Associate Professor in large State Universities	5,600.00
Instructors in large State Universities	3,700.00
Teachers in big city High Schools	5,500.00
Teachers in big city Elementary Schools	4,800.00
Teachers in small town Elementary schools	3,190.00
NON-TEACHING	
Railroad Engineers	$7,300.00
Railroad Firemen	6,180.00
Railroad Switchtenders	4,700.00
Workers in Automobile Industry	5,000.00
Workers in Bituminous Coal Industry	4,200.00
New York Telephone Operators	3,200.00

These average annual earnings in various occupations indicate that the general level of the teacher's salary is too low. Competent individuals can earn far more money in other fields. It is also generally understood that the rate of advancement is too slow and that promotion is not based on performance. Differences in ability are frequently ignored; the best and the mediocre move up the salary scale together, too frequently on the basis of time served and credits accumulated. The top salaries are also too low. In most institutions, and unlike other professions, there are no rewards for the outstanding individual. The salary scale today discourages talented individuals from entering or remaining in teaching. The teacher to remain in education and advance usually must stop teaching and enter administration or obtain additional income as a consultant or in some other way.

Our use of manpower in education has changed little in the past fifty years. In other fields, a professional revolution over the years has produced a steadily more efficient use of manpower. Every profession is unique in some respects. Teaching differs from engineering, medicine, and various business positions. However, these differences do not exempt teachers from the basic principles which have improved manpower utilization in other professions and throughout our economy. Other professions have served more people and served them better as they have progressively delegated their sub-professional tasks to less highly trained technicians and other assistants.

These are not all of the problems that are in need of solution. However, if we give proper attention to these , we can go a long way toward obtaining the educational program needed for the future.

Educational TV

Educational television deserves mention. When television became commonplace in the home, educators all over the world began thinking it was a medium which might solve all the problems facing them, such as the increasing enrollments, teacher and

space shortages. It was thought that it would be possible to bring to students all over the country the greatest teachers, the learned men in their specialties. It was also thought that students could be scattered in classrooms at a number of schools and through television see and hear one professor lecture and demonstrate.

At least sixty American universities, colleges, and professional schools have been experimenting with educational television. One item that presents a problem in the use of television, even in the less-expensive closed circuit, is that the broadcasting facilities alone cost approximately $125,000. In addition, the results of the Pennsylvania State University studies with educational television were disappointing from the standpoint of the reactions of both students and faculty. Using control groups, who received the conventional instruction, the study found no significant differences in the amount of learning obtained by those who learned by television and those who attended class and faced the teachers. They also found that in some courses, the attitudes of television-taught students, if not merely neutral to the project, were slightly negative. It was also found that experienced teachers preferred their usual teaching methods to televising their lectures and demonstrations. These experiments have decreased the enthusiasm for educational television to solve our problems. There seems to be no doubt that students respond better and give closer attention to a live personality than to a figure on a screen. It may be that that the future will change the concept of educational television and it may prove to be a valuable aid.

The Problem of Laboratory Chemists

A more specific problem, in which we as members and friends of THE AMERICAN INSTITUTE OF CHEMISTS are more interested, is how are we going to obtain and train the number of chemists needed in our laboratories. Right now the chemists that we do have in our industrial laboratories are being withdrawn from the laboratory to enter marketing, sales, and other areas. This procedure is highly undesirable because we are depleting the laboratory staff whose responsibility is to develop the technical information and data on new processes and products. This basic information must be obtained. New processes and products obviously must and will be developed. It is agreed that perhaps it is quite natural for a man in the laboratory to be transferred to sales, market research, and other areas because this transfer is natural when the technical training and basic knowledge may have been developed by the individual who will use it. If the laboratories are depleted to the point where the necessary basic and technical information are no longer being produced, we will find ourselves in a serious

situation. Troubled times are ahead if we continue to deplete the staff of our laboratories. I do not mean to imply in the least that sales and market work are not important. Both jobs must be done and we must develop a program to provide an adequate supply of the men needed.

"Four Jobs for Each Graduate"

You would expect an individual associated with a college or university to believe that the solution to the problem lies in this direction. I shall illustrate in more detail the importance of the problem by giving some information on the textile industry and textile education, with which I have had some association for the past twenty years, although textile education is not an important part of the program at the university of Rhode Island.

There is a textile college in New England faced with a situation so serious that it may be forced into curtailment or drastic revision of the program in textile education. It is a curious situation because it is neither lack of money, facilities, or jobs for graduates that produce the problem. The need is a sufficient number of students willing to take advantage of the opportunities available. It is particularly acute in textile chemistry and textile engineering, which have attracted fewer and fewer students over the past several years. Generous scholarships are available, but have been of little help. Jobs are available, students are not. The president of the institution stated that, "It seems nonsense to me that we have four jobs for each graduate, yet we cannot get the students." The problem is not limited to New England. It is a common problem in the nation's ten textile colleges. It is particularly serious that this situation should develop at the time when the industry is adjusting itself to more scientific operation in an effort to compete with cheaper fabrics from abroad and to handle adequately the new man-made fibres.

Statistics collected recently by the National Council for Textile Education showed that the ten textile colleges will operate at about half of normal capacity this year. The institutions involved could educate approximately 5000 students. It is estimated that they will have about 2500.

There are those who attribute the trouble to the bad press given to the industry in recent years. Then there is the Department of Labor announcement in 1949, when they looked into an apparently cloudy crystal ball and stated that in the next few years the number of graduates in engineering and science will exceed the demand. It is indicated also that the industry has done very little to glamorize itself or to sell young students on the opportunities it offers. This situation is compared with such glamor fields as electronics, airplanes, etc. There have been too many distress stories about the

industry in the press and magazines. More favorable publicity should be made available. For example, last year there were 2000 jobs available to the nation's 500 textile graduates. It is estimated that starting salaries ranged from $4200. to 6000.

What I have said about the textile industry applies equally well to the chemical or any other industry. More technically trained men are needed now in every direction. I am disturbed by a recent report from the Manufacturing Chemists' Association that the chemical industry sales during 1956 will estimate 25-billion dollars, a new record. In addition, it is recorded that the chemical industry investment in plants and facilities during 1956 was approximately one-billion dollars, the sixth consecutive year in which the industry has invested at least this amount in expansion. Production, like sales, reached new high levels. All this points to an increase in the seriousness of the problem of an adequate supply of chemists.

Attract More Students to Science

I am one of those who believe that a solution to the problem is available. The increase in the college population during the next twenty-years will make students available, if they can be attracted to the chemical profession. Increasing incomes and increased economic opportunities have a bearing on this question quite apart from the basic facts of vital statistics. This period through which we are now passing where the college age population has dropped to its lowest point is only temporary. We can look forward to sharply rising curves from now on. Birth rates have their effect, but I believe the present shortage is principally the result of a free and expanding economy.

We must all tackle this problem. Industry must help. Although it has, in the past, given substantial scholarship aid and endowment funds, it must assume a greater share of responsibility for encouraging students in chemistry. Lack of favorable publicity by industry has deterred young people. Industry has been content to call upon the colleges to supply the men, but it has not done much to publicize the opportunities available. Industry should have a strong public relations program. My remarks do not apply to all industries, because these are those who send elaborate brochures to the schools and who provide lectures and films. But we must do more.

A pharmaceutical and chemicals company recently urged its shareholders to take an active part in promoting the study of science in their local schools. The annual report included a discussion of the increasing shortage of trained scientists. The 19,000 owners of the common stock were asked to go to work in their own communities. The company warned that the nation would be short 100,000 scientists and engineers by

1960. Statistics were presented to show that the number of science and engineering graduates in American colleges had decreased 50 per cent since 1950. Every shareholder should encourage the study of science and engineering by developing strong and attractive high school curricula leading to these professions. Although many other companies have called attention to the growing shortage of chemists, I believe this to be the first formal appeal made directly to stockholders, and I believe that if it is seriously followed, results will be produced.

This a legitimate way to influence the young mind, through honor and prestige of the scientists and engineers, hero worship if you wish; glamorous! The future is in the hands of men and women with scientific knowledge and training.

What Can We Do Today

You may say that I emphasize a future solution to the problem and ask, "What are we going to do today and tomorrow on this problem?" There are some industries that are following a program variously known as upgrading technicians. Lower grade technicians are recruited from among the non-technical employees. The newly designated technicians are given additional training as required. This procedure may be a partial solution to the problem, but surely it does not provide for the properly trained chemists so badly needed. I regret that technical management will probably be forced to hire more and more technicians as the shortage of chemists increases. Technicians are generally assigned to work with one chemist or one team of professional personnel. It is found on the average that individual chemists can supervise two technicians profitably.

Colleges and universities may do more by increased activity to meet the needs of industry. I hope that this can be done. My plea is to provide the chemists required to staff adequately our laboratories and then to leave them there where they can be the most productive. This is one of the important programs upon which our future progress is dependent. You are aware of the statement of President Killian, "Our superior industrial technology cannot flourish and continue to expand unless science is vigorous and creative." He further stated that there were three barriers to scientific advance: (1) Overemphasis on numbers, that is the belief that scientific strength can be augmented simply by multiplying the number of scientists, including chemists, without concentrating on quality; (2) too great an emphasis on short-term objectives. Basic research must be protected as it is the beginning of all new advances; (3) the growing popular misconception that science is wholly materialistic and destructive in its interests and effects.

Today there are many young men thinking seriously about the most pressing obligation, what to do with their life, what to make of themselves. The realization must come that the individual can find personal growth, confidence, and the full life in science. It must not be through compulsion but of his own free will, not for riches only but a sincere, logical conclusion.

I fear that I have emphasized the problems more than I have the solution. I am sure, however, that in some of the suggestions I have made improvement can be obtained.

An Educator Aids the Quest for Knowledge

Lawrence H. Flett, F.A.I.C.

Former President of The American Institute of Chemists; Consultant, National Aniline Division, Allied Chemical & Dye Corporation.

(Presented when Dr. W. George Parks received Honorary AIC Membership at a Meeting of the New England AIC Chapter, at the MIT Faculty Club, Cambridge, Mass., Oct. 31, 1956.)

THE AMERICAN INSTITUTE OF CHEMISTS awards a limited number of Honorary Memberships, and the recipients are selected with the greatest of care because their names are added to an impressive list of well-known chemists of whom the AIC is very proud. The INSTITUTE expects all of its members to render more than ordinary service to their profession and to their country, so when they award an Honorary Membership, it is for a special service. A review of the list of Honorary Members will show that the award is most often presented to people who have shown a new way, a better way, to go forward.

Dr. W. George Parks, who has long been a member of the AIC, has rendered the finest of service to the chemical industry, particularly the textile industry. Through constant service on government committees, organized for the nation's defense, he has rendered important service to the country. Such fine and patriotic service is expected of Fellows of THE AMERICAN INSTITUTE OF CHEMISTS. It is in the field of education that Professor Parks has rendered that unusual type of leadership that commands the respect of his fellow members who elected him to Honorary Membership.

There are two phases of Professor Parks' contributions which call for very special mention. The first is concerned with the problem of the current and impending shortage of technical men. Prof. Parks has given one of the clearest analyses of the problem. At the recent meeting of the American Chemical Society in Dallas, he discussed the student phase of that problem. It was at a lunch-

con of one of the Divisions. Those of us responsible for the luncheon were irked when no man showed up with tickets for the late ticket sales, but in fact there were no tickets left! The hotel cooperated. Tables were extended outside the doors to the elevators. After the planned luncheons were exhausted, a mixture of luncheons was brought up from the dining room . . . The discussion rated, as it should, first-page mention in *Chemical & Engineering News*. The audience was not disappointed.

The problems outlined by Dr. Parks were discussed by the group throughout the meeting, particularly the problem of keeping students at the study of chemistry when pleasant times and easier courses beckoned intriguingly. We have heard that the Chemistry Department of the University of the State of Rhode Island has taken constructive and successful steps to insure the continued interest of the chemistry students; a most important step for all schools if an adequate supply of technical men is to be available in future years. The shortage of technical men will not be solved by publicity; it cannot be solved by money alone. Its solution can only result from the true understanding of the problem so clearly set forth by Dr. Parks and by such constructive steps as have been taken in his own department.

This phase of Prof. Parks' work deals with the future. The phase of his work which has had the greatest impact on the advancement of chemistry and the chemical profession today has come through his direction of the Gordon Research Conferences.

The Gordon Research Conferences are now twenty-five years old. They were started as we emerged from a period when the organized research laboratory had replaced the earlier industrial chemist who worked as an individual. In the earlier days, the industrial chemist had been a jack-of-all-trades, running plant controls, checking raw materials, and doing the only research work carried on by his company. Now the industrial laboratories as well as the academic laboratories were making technical and scientific contributions to a new flood of literature. Best of all, a new interest in the study of chemistry resulted in a great increase in the number of chemists which was to still further expand the chemical knowledge.

In the early part of the Century, a chemist with a good education could maintain a complete knowledge of his field with a moderate amount of reading. He could even be an outstanding expert in his field. By 1931, when the Gordon Research Conferences started, knowledge was expanding so rapidly that constant study was required of those who sought to maintain a position in the field of chemistry. The education of a chemist could no longer stop when he received his degree but must go on and on throughout his career.

It was in this period that Dr. Neil Gordon came forth with a wonderful idea for bringing the latest developments in scientific knowledge to the attention of chemists. Chemists had furthered their education by meeting at conferences. Dr. Gordon wanted a special kind of conference. He pointed out that years elapse between the time a discovery is made in the laboratory and the time when this information is made available through publication.

There is checking and rechecking, and approval, articles to be written, editors and reviewers to be satisfied. The period might average from three to six years. This delayed successful accomplishment in the chemical field. In chemical research, delays are costly but, more important, the benefits which might have resulted from the earlier knowledge were held back and so were denied to us, even to the sick and the needy.

Dr. Gordon asked, "Why don't we get together and discuss what we are doing now, with a gentleman's understanding that those who participate in discussions will not rush back to their laboratories and try to scoop those who divulge information, nor will there be any publicity that might later prove embarassing?" Such a plan could work among chemists because the nature of the chemist's work is such as to require meticulous honesty.

Another phase of Dr. Gordon's plan concerned the amount of knowledge any individual could bring to his creative work. The march of science had long ago passed the stage where one individual could know all there was to know. If there were, then, two individuals, each in a different field, with a complementary knowledge, and if you could bring about a friendly and honest communication between them, then each one would have available almost twice the knowledge that he alone possessed. What then if there were ten or one-hundred people who could communicate in this way? The Gordon Research Conferences were operated in a way to establish such respect and friendship and the plan worked. The sharing of knowledge at the conferences was not confined to the conference room. When people went back to their laboratories, they still maintained the priceless communication that had already opened up new vistas of knowledge to them.

Under Dr. Gordon's indomitable direction, his conferences proved successful, but after he relinquished control, the conferences were beset with problems and soon folded. The Gibson Island Conferences, as they were then called, had nothing left but an idea, a moth-eaten club house, and a group of ardent disciples. At this stage, a committee made up of six of the faithful was organized to reestablish these unique conferences. The first work of the committee was an intensive study of a new location. This was found in the inspirational

surroundings of Colby Junior College at New London, New Hampshire, where the weather is pleasantly cool in the summer, which is a season that is somewhat less demanding on the chemist's time. Next the committee took a step which proved to be of far-reaching importance. It selected Prof. W. George Parks as director, and he enthusiastically accepted the challenge to restore the defunct conferences. Under his direction, the conferences have grown in size, in number, in scientific importance and in their contribution to the welfare of this country. When the conferences reopened under Prof. Parks, there were six conferences. Now there are approximately forty; thirty-six in any one year in three different locations.

Sufficient time has now elapsed so that it is possible to begin to evaluate the service that these conferences have rendered. It is possible to say that the basic scientific information exchanged at these conferences has already been an important factor in advancing chemical research and chemical technology. The attendance at the conferences has included most of the outstanding research chemists from this country and many from abroad. There were 3800 of the nation's outstanding chemists at these conferences this year. If it were not necessary to limit the size of the conferences to insure a general discussion, there would have been many more.

The discussions have proved to stimulate the conferees' desire for further knowledge and to nurture their inventive genius. Those of us who have witnessed the scientific advances in any one of the fields covered by the conferences, can assure you that no other single factor has contributed so much to the advance of chemistry in America as the Gordon Research Conferences under the able guidance of Director Parks. His constant personal interest, his devotion to the ideals of the conferences, his influence, his capacity for getting things done, and particularly his ability to deal understandingly with chairmen and conferees alike, have all combined to spell conspicuous success.

Dr. Parks' wife and partner, Dr. Margaret Parks, is also professor of chemisty. She has unselfishly chosen to devote herself to the teaching of chemistry. At the Gordon Research Conferences in New London, she has been instrumental in bringing the wives together at the start of each new conference, which anyone knows is one of the surest ways to bring chemists together. Both Professors Parks have been loyal members of the INSTITUTE. Their unselfish lives have our profound admiration.

Solar Energy Library: Established by the Association for Applied Solar Energy, 204 Heard Building, Phoenix, Arizona. It now contains over 2500 references.

Presentation of Honorary Membership

THE presentation of Honorary AIC Membership to Dr. W. George Parks, head of the Department of Chemistry, University of Rhode Island, Kingston, R.I., and director of the Gordon Research Conferences, was made at a meeting of the New England AIC Chapter, held October 31, 1956, at the Faculty Club, Massachusets Institute of Technology, Cambridge, Mass.

George H. Taft, consultant, Concord, Mass., and AIC National Council Representative, presided. Lawrence H. Flett, former president of THE AMERICAN INSTITUTE OF CHEMISTS, spoke for Dr. Parks. John H. Nair, AIC president, presented the certificate of Honorary Membership to Dr. Parks, who accepted it with an address on "The Chemist and Education." (See preceding pages.)

Business Week

A Group of Scientists at the Gordon Research Conferences

Dr. Parks, who was born in Rockwood, Pa., received the A.B. degree from the University of Pennsylvania, and the M.A. and Ph.D. degrees from Columbia University. Since 1926, he has taught, assisted, or lectured at Drexel Institute, Columbia University, and Rhode Island State College. He became head of the Department of Chemistry at the University of Rhode Island in 1950. In 1943, he was appointed director of the Advisory Board, Quartermaster Research and Development, National Research Council. He has been director of the Gordon Research Conferences since 1947. His special fields of scientific interest are catalytic vapor phase oxidation; textile research; flameproofing,; solvent extractions, and organic syntheses.

The citation on the certificate of Honorary Membership reads:

To

W. George Parks

For his effective contribution to the field of chemical education, both as teacher and as adminis-

trator; for his professional activities as shown by his devotion to helping and inspiring individual scientists throughout the chemical profession; and for his unselfish participation and leadership in local and national scientific organizations, working in the interests of science and his country; and particularly for his untiring zeal and great wisdom in guiding the Gordon Research Conferences.

Appointed: Dr. Howard I. Cramer, F.A.I.C., as director, Technical Liaison, of Pennsalt Chemicals, Pennsylvania Salt Mfg. Co., Philadelphia 2, Pa. He will further the company's interest in foreign technological developments and the exchange of scientific information.

Moved: The Chemical Products Division of Archer-Daniels-Midland Company from Cleveland, Ohio, to 700 Investors Building, Minneapolis 2, Minn. John D. Hetchler, F.A.I.C., sales manager, and George Schneider, F.A.I.C., have moved to Minneapolis.

Established: Ten grants-in-aid, of $250.00 each, for freshmen at North Dakota State College, announced by Clyde L. Smith, president of Federation of Paint and Varnish Production Clubs, Philadelphia 7, Pa. The faculty of the school will select the recipients.

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Scholarships: Two of $700 each, for the academic year 1957-58, for graduate study in librarianship, offered by the Special Libraries Association. Request information from the Secretary of the association at 31 East 10th St., New York 3, N.Y.

Announced: By Dr. Robert E. Hulse, F.A.I.C., vice president in charge of chemical and allied activities, that U.S. Industrial Chemicals Co., Division of National Distillers Products Corp, will put into operation by the end of 1957 a ten-million pound-per-year plant for the production of titanium sponge, at Ashtabula, Ohio.

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Literature Research as a Tool for Creative Thinking

Allen Kent, F.A.I.C., and J. W. Perry, F.A.I.C.

Associate Director and Director, Center for Documentation and Communication Research, Western Reserve University, Cleveland 6, Ohio.

(Presented before the Special Libraries Association, Pittsburgh, Pa., June 4, 1956.)

THE library is a tool for creative work in much the same manner as the laboratory.

The aim of research is to solve problems. Needed information may often be obtained from the literature more readily and at lower cost than from the laboratory. The techniques involved in drawing upon these two sources are so greatly different that similarities in the use of information and comparative costs in money, effort, and time are often obscured.

A survey of special libraries in a sample of one-hundred metallurgical companies has been conducted in order to obtain information about the awareness of management of the contribution that the library can make to the research effort.

The study was aimed at evaluating the economic importance of the effective utilization of recorded knowledge. It was anticipated that it might be possible to correlate the use of recorded information with the financial success of various companies, as indicated by percentage increase or decrease in annual net operating profit based on total income over a ten-year period. (The largest percentage increase was designated as 1 on the scale.) Preliminary correlations are reported.

A questionnaire was sent out to one-hundred companies in the metal field. To date about forty-five replies have been received. The questions were dircted to the following main areas:

A. Use of information from published sources and private reports.
B. Ways in which information is obtained.
C. Estimate of per cent of research budget involved in maintaining and using library and similar facilities.
D. Estimate of per cent of staff time of various classes of research personnel spent in working with recorded scientific and technical information.

In order to obtain this information with reasonable assurance that the overall company point of view was taken into account, the questionnaires were directed, in general, to the vice president in charge of research and development. In all but three or four cases, the vice president himself completed the questionnaire. The other three or four questionnaires were turned over to the librarians for completion.

A thorough statistical analysis of the replies has not yet been carried out, as additional replies are still

being received. Therefore, the results as presented are more indicative than conclusive.

A. *Use of Information from Published Sources and Private Reports*:

As was anticipated, recorded information is applied to the conduct of research and development activities in the metals field in various ways. These include not only the scientific or technical realm, but also surveillance of economics, business, and financial trends; law and government (labor, tax, anti-trust and corporation laws); and marketing (sales trends, pricing policies). As a consequence, a wide range of recorded information is used to serve two primary purposes:

(1) Scientific research and technical development directed to the products of the company but also influencing company policies and activities.

(2) Commercial intelligence, both technical and non-technical in character, to discern new fields of possible interest and to anticipate potential competitive activity by continuing surveillance.

The questionnaire also inquired how the recorded information that is required for decision making is gathered (with indication of rank in proportion to extent of use). Here alternative replies were suggested as follows:

1. Asking someone in the organization.
2. Hiring outside consultants.
3. Personal reading on the part of management.
4. By direct recourse to company library.

Two interesting correlations were observed:

67% of those companies that depend primarily on personal reading of management and that depended least on library resources were the last 20% in earning record standing.

67% of those companies that reported primary dependence on library resources for information for management decisions were in the first 30% in earning record standing.

Another correlation with earning record became evident from answers to a question as to what management expects from the library. Here the following alternative possible replies were suggested:

a. A written summary or abstract of information found
b. The actual articles or books located
c. A list of references from which the most relevant are chosen.

67% of those companies whose management personnel expect a written summary or abstract of information found are among the top 45% of companies in earning record rank.

The questionnaire also requested an estimate of the percentage of scientists and engineers who are believed to be satisfied (or dissatisfied) with present library and similar facilities.

80% of those companies who have 25% or more scientists dissatisfied with present facilities are in the top 50% companies in earning rank.

Another series of questions was directed to estimating the percentage of working time spent by several classes of employees in studying or searching scientific and technical information:

60% of those whose senior scientists, senior technicians, and senior productive men spend more than 6% (up to 15%) of their working time in this pursuit are among the top 50% of companies in earning record rank.

67% of those companies whose management personnel spend less than 5% of their working time in this pursuit are among the top 50% companies in earning record rank. (This checks out well with the observed correlation that 67% of those companies that depend primarily on personal reading of management and that depend least on the library are among the lowest 20% in earning record rank. It would appear that managerial time spent in personal exploration of scientific or technical literature is *not* productive, whereas scientist time so spent *is* productive, but that such scientists tend to be dissatisfied with presently available library facilities.)

As was stated earlier, the statistical evaluation of the data provided by this questionnaire is not yet complete. However, the results are sufficiently indicative to suggest a number of tentative conclusions, as follows:

1. There is a high positive correlation between the growth in earnings of companies in the metals industry and the mode and degree of utilization of recorded information. This correlation suggests the extent to which the use of recorded information in "planned creativity" may be exerting a positive influence on the successful operation of metals companies that are engaged in research.

2. There is a high positive correlation between the growth of earnings of companies in the metals industry and the percentage of their research budget devoted to making use of library and similar facilities to identify and to provide information for planning and conducting research and development.

3. In the overwhelming majority of the metals companies with top earning records, 25 per cent or more of the research scientists are dissatisfied with present informational facilities. This overwhelming positive correlation suggests keen awareness of the importance of proper use of recorded information on the part of management in the top-earning companies.

It is deemed premature to attempt to draw further conclusions at this time. It seems obvious, howver, that the results are sufficiently interesting to warrant a more extensive study, which might permit more specifically formulated conclusions to be firmly established.

Pittsburgh Conference: On Analytical Chemistry and Applied Spectroscopy to be held at the Penn-Sheraton Hotel, Pittsburgh, Penn., March 4-8, 1957.

Communications

The Key Is Self-Assurance

To the Editor:

Dr. Lobstein's reflections on professional degrees (THE CHEMIST, Dec. 1956, p. 473) throws some light in a dark corner. He wonders why when new acquaintances find that he is not a 'real' doctor he is never called 'Doctor' again. He feels chemists themselves are to blame for this snub. Among some of the paths to prestige he suggests a system of licensure to license research which might involve a battle with the A.M.A.

The M.D. accents the 'Doctor' in his name for income reasons. He wants everyone at a social gathering to know he is practicing medicine. His wife always refers to him as 'the Doctor' and answers the telephone the same way. When he answers the phone he says, 'Dr. Jones speaking.' Everyone knows that his title of Doctor is important to him and that to refer to him as Mister would cause him to react with displeasure. And, of course, his stationery, bank checks, even his automobile license carries the legend 'M.D.'

Chemists who are self-employed in the practice of chemistry announce their doctorships in such a way that the listener is at once aware that to call this individual Mister would be to invite hostility. In answer to the question, 'Where do you practice, Doctor?' the retort might be, 'Practice? Practice, my dear fellow, is for artisans. I create!' Such a rejoinder may lose a friend but may cause the individual to call you 'Doctor' to your face.

If Ph.D. chemists by being called Doctor by all and sundry would develop some of the self-assurance of our medical friends I would endorse such a move. But while the pussycat belongs to the same family as the lion it cannot roar!

—Dr. William I. Harber, F.A.I.C.
Chicago, Illinois

Smog Control Needs More Chemists and Engineers

To the Editor:

A relatively new field, Air Pollution Control, is already feeling the effects of a shortage of chemists and engineers. The Air Pollution Control District, County of Los Angeles, announces:

"Currently vacant are 20 positions for engineers and engineering assistant with starting salaries of $608 and $516 a month. Also open are 6 positions for air pollution chemists, a spectroscopist, a physicist and 6 research assistants, with salaries ranging from $489 to $715. Despite intensive recruitment effort, qualified personnel have not been found locally, are now being sought throughout the country."

Initiated by the County of Los Angeles, an Air Pollution Control District has been established there to control pollution from all sources. It is reinforced by the power of inspection by trained chemists and engineers following complaints; the exercise of police powers, and a permit system which has power to eliminate the cause. It has set up a "Smoke School" for training technically qualified personnel.

Following the lead of Los Angeles, other communities are also establishing air pollution control measures. Proposals for such authorities for Pollution Control Districts are now being presented to the legislatures of New Jersey, New York, and Connecticut. The Mayor of New York City, which has its own Air Pollution Control board, has requested the State of New York to include the city in the State Air Pollution Program.

As more States and cities set up boards to deal with air pollution, the demand for qualified scientists and engineers in this field will rapidly increase.

Those who are interested in the activities of air pollution control groups may obtain information from the Air Pollution Control District, 434 South San Pedro St., Los Angeles 13, Calif.; the independent Air Pollution Foundation, 704 So. Spring St., Los Angeles 14, Calif., and from the Air Pollution Abatement Committee of the Manufacturing Chemists Association, Inc., 1625 Eye St., N.W., Washington 6, D.C.

—Dr. John A. Steffens, F.A.I.C.
New York, N.Y.

Refreshing

To the Editor:

Every issue of THE CHEMIST is refreshing to me. You are to be congratulated for doing a difficult job well!

—Dr. Julian F. Smith, F.A.I.C.

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December Meeting

The 312th meeting of the National AIC Council was held December 12, 1956, at 6:00 p.m., at The Chemists' Club, New York, N.Y. President John H. Nair presided.

The following officers and councilors were present: W. B. Blumenthal, J. R. Bowman, C. L. Brown, R. P. Dinsmore, L. A. Hall, F. A. Hessel, D. B. Keyes, W. R. Koster, R. L. Moore, J. H. Nair, G. L. Royer, M. Sittenfield, W. J. Sparks, and L. Van Doren. Dr. L. T. Eby, chairman of the Membership Committee; K. M. Herstein for the Committee on Qualifications; M. J. Hiler, co-chairman of the 1957 Annual Meeting, and Vera Kimball were present.

President Nair reported that he had met with the directors of the Ohio Chapter in September, and since then with the New England Chapter, the Chicago Chapter, the New Jersey Chapter, the Alabama Chapter, the Louisiana Chapter, and the Pennsylvania Chapter. He urged the Chapters to suggest projects of interest to their areas. It is not the function of the national office to tell the Chapters what to do. Each Chapter has problems of special significance.

The Secretary announced with deep regret that the deaths of the following members have been reported since the previous meeting:

Dr. Horace G. Byers, Hon. AIC, first president of the AIC, on Dec. 2, 1956.

Dr. Anton J. Carlson, F.A.I.C., on September 2, 1956.

Robert C. Demsker, M.A.I.C., on June 11, 1956.

Dr. Herbert H. Guest, Emeritus Fellow, on October 22, 1956.

Dr. Henry R. Kraybill, F.A.I.C., on September 30, 1956.

Dr. J. A. LeClere, F.A.I.C., on November 16, 1956.

The Council observed a moment of silence in honor of these members.

President Nair was requested to appoint a committee to prepare suitable resolutions on the death of Dr. Byers, first AIC president. (Dr. Foster D. Snell and Dr. M. L. Crossley were asked to serve on this committee.)

The Secretary reported that the AIC membership totals 2893.

Dr. Dinsmore, chairman of the Committee on Honorary Membership, announced that he had received various nominations for Honorary Membership from the Chapters, and that the Committee was happy to have these suggestions. Decision will be made at the next meeting of the Council.

President Nair announced, for the Committee on the Gold Medal, that Dr. Roy C. Newton had been selected to receive the 1957 Gold Medal, which will be presented at the 1957 Annual Meeting in Akron, Ohio, May 22-24.

The Secretary announced that he had sent copies of the Proposed Contract for Chemists and Chemical Engineers to placement officers of accredited colleges and universities, with a letter of transmittal prepared by Dr. George L. Royer.

Dr. Dinsmore stated that the Board of Directors recommended that Emeritus Membership be conferred on Dr. Ira D. Garard, Dr. Herman Maisner, Robert Schwarz, and Dr. Dwight L. Scoles. These Fellows were given Emeritus status.

The Executive Committee stated that a letter prepared by Benjamin Sweedler to inform the Chapters about a proposed Bill to confer retirement benefits on the self-employed, had been approved.

Dr. Dinsmore reported that the Board of Directors discussed a booklet to be prepared about AIC activities. The Secretary was instructed to write to Chapter Chairmen asking them to send a list of the activities of which the Chapter is proud, to him by the first of February.

The President was requested to appoint a Committee on Chapter Activities, to study the problems affecting the various Chapters; to make suggestions, and to offer help to them if needed.

Dr. Royer reported that the Committee on Manpower was considering the subject of "The Chemist Over Forty." In response to a request in THE CHEMIST for letters from readers on the subject, his Committee had received several communications. He expects to prepare a report this Spring.

Dr. Eby reported progress by the Committee on Membership.

President Nair stated that there has been no formal Charter issued to Chapters by the AIC, and asked Dr. Hall to obtain information about the preparation of such Charters.

Dr. Brown reported that the New Jersey Chapter met October 23rd to hear President Nair speak on "Professionalism." In January the Chapter will meet at Montclair Teacher's College to hear a talk by Dr. W. O. Baker of the Bell Laboratories. At a Spring meeting, Dr. Detlev W. Bronk will be the speaker.

Mr. Koster stated that the Washington Chapter has held three luncheon meetings with discussions on professional subjects. The Chapter wants to help itself through self-improvement and to extrovert through expressing themselves in aiding the professional status of all chemists and chemical engineers.

President Nair commented on the loss of professional status by scientists when the Civil Service professional grades were abandoned in favor of the present GSA ratings.

Dr. Keyes commented on the present system of licensing engineers in Washington, D.C.

Mr. Blumenthal reported that the Niagara Chapter is meeting next week to hear a speaker on "Patent Law and The Chemist." It is also working on a group insurance plan.

Mr. Moore announced that the New York Chapter is meeting jointly with the New York Section of the American Chemical Society in February. In March it will sponsor the meeting to present Honorary AIC Membership to Lawrence H. Flett. The Chapter will welcome an exchange of notices or other material sent out by other Chapters. It is preparing a "Guide for the Young Chemist," to which several members will contribute.

Mr. Sittenfield reported that the Symposium on Manpower sponsored by the Pennsylvania Chapter with other groups had been most successful. He announced that the Honor Scroll of the Chapter will be presented to Dr. Charles L. Thomas, F.A.I.C., newly-appointed director of research of Sun Oil Company, on Jan. 10th.

Mr. Hiler announced that plans for the 1957 Annual Meeting were progressing satisfactorily. The theme will be "The Chemist and the Employer." More than thirty persons have been assigned to various Committees. The Honorary Chairman of the meeting will be Dr. Ray P. Dinsmore.

Dr. Keyes presented a letter concerning the Council for Basic Education, and the Secretary was asked to send a copy of the letter to each councilor.

President Nair stated that the Institute of International Education is interested in the exchange of students for technical experience. Dr. Bowman added that the AAAS is interested in a closely similar program.

The following new members were elected:

Fellows

Borows, Arthur
Research & Development Chemist, Pigments Division, Sun Chemical Corp., Harrison, New Jersey.

Craig, Dr. David
Research Scientist, The B. F. Goodrich Co., B. F. Goodrich Research Center, Brecksville, Ohio.

Craig, Dr. L. E.
Director of Research, Grand River Chemical, Division of Deere & Company, Pryor, Oklahoma.

Crowe, Dr. Bernard F.
Air Reduction Company, Inc., Murray Hill, New Jersey.

Cunningham, Dr. George L.
Chemical Consultant, 102 Church Street, Greer, South Carolina.

Curlin, Dr. Lemuel C.
Chief Chemist, L. Perrigo Company, Allegan, Michigan.

Hackett, Rev. James W., O.P.
Professor & Head, Department of Chemistry, Providence College, Providence 8, Rhode Island.

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Bosworth, Sessions, Herrstrom & Knowles, National City Bank Bldg., Cleveland 14, Ohio.

Jaskowski, Michael C.
Fellow in textile research, Mellon Institute of Industrial Research, 4400 Fifth Avenue, Pittsburgh 13, Pa.

Jobling, Dr. William H.
Chief Supervisor, Chambers Works, Plant Technical Section, E. I. duPont de Nemours & Company, Pennsgrove, New Jersey.

Larsen, Dr. Robert A.
Pillsbury Mills, Inc., 311 S. E. Second Street, Minneapolis 14, Minnesota.

Naimark, Dr. George M.
Assistant to Director, Medical Research Department, White Laboratories, Inc., Kenilworth, New Jersey.

Neifert, Dr. Ira E.
Chairman, Department of Chemistry, Knox College, Galesburg, Illinois.

Putnam, Hamilton W.
New Products development for refrigerated foods, Pillsbury Mills, Inc., Refrigerated Foods Division, 620 Barret Avenue, Louisville 4, Kenturky.

Rochow, Dr. Eugene G.
Professor, Department of Chemistry, Harvard University, 12 Oxford Street, Cambridge 38, Massachusetts.

Straka, Dr. Leora E.
Research Librarian, Goodyear Tire & Rubber Company, Akron, 16, Ohio.

Wagner, Dr. Robert M.
Group Leader, Saran Yarns Company, Odenton, Maryland.

Welch, Dr. L. Marshall
Petro-Tex Chemical Corporation, Houston, Texas.

Werner, Dr. Jesse
Director of Commercial Development, General Aniline & Film Corporation, 435 Hudson Street, New York 14, New York.

Whaley, Dr. Wilson M.
Section Head, Central Laboratories, General Foods Corporation, 1125 Hudson Street, Hoboken, New Jersey.

Whitener, Paul D.
Assistant Professor of Chemistry, Winthrop College, Rock Hill, South Carolina.

Wick, Dr. Arne N.
In Charge Department of Research, Scripps Clinic & Research Foundation, 476 Prospect Street, La Jolla, California.

Wilson, Dr. Joseph E.
Senior Chemist, Bakelite Company, Division of Union Carbide & Carbon Corp., Bound Brook, New Jersey.

Members

Butler, William P.
Treasury Dep t., Internal Revenue Service, Int. Rev. Bldg., Washington 25, D.C.

Wolf, Ernest
Administrative Assistant, Olin Mathieson Chemical Corporation, Box 480, Niagara Falls, New York.

Reinstated as a Fellow

Post, Dr. Howard W.
Professor of Organic Chemistry, University of Buffalo, 3435 Main Street, Buffalo 14, New York.

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AIC Activities

New York Chapter

Chairman, Dr. Murray Berdick
Chairman-elect, Dr. Ernest I. Becker
Treasurer, Shepherd Stigman
Secretary, Miss June Larsen, Sugar Research Foundation, 52 Wall Street, New York 5, N.Y.
National Council Representative
Richard L. Moore

From *The New Yorkemist*

The New Yorkemist, the publication of the New York Chapter, carries a message from Dr. Murray Berdick, Chapter Chairman, that is worth repeating:

"I am frequently asked why join the AIC, and the question is usually some variant of "What can I get out of joining?" My answer to that is, very little if one has the attitude, "What's in it for me?" In brief, the objective of the AIC is to advance the status of the profession. Insofar as the AIC is successful, the individual will benefit. Beyond that, any given individual will benefit from joining to the extent that he contributes to the group.

"So far as contributions are concerned, I would like to hear from any members who think the AIC is doing nothing for them. But bear in mind that if you think that the AIC is doing less than you expect, I want to know what you expect. You can write to me at Evans Research & Development Corp., 250 East 43rd St., New York 17, N.Y.

"So far as concrete benefits are concerned, let me call your attention to the wonderful opportunity the New York Chapter offers you under the group health insurance plan developed by a committee under Bob Ginell. If you are accepting your responsibility as a member by trying to interest others in joining AIC, you can cite this as a clear benefit. If you want details on the insurance plan, or membership application blanks, please let me know.

"Another Chapter activity you should be aware of is our summer employment program for New York area college

students. You will be doing your Personnel Department a favor by alerting them to this. Put them in touch with Dr. Lewis Fibel, New York City Community College, 300 Pearl St., Brooklyn 1, N.Y.

"Don't forget to come March 11th to the dinner for 'Mique' Flett."

Presentation of Honorary Membership

Lawrence H. Flett, National Aniline Division of Allied Chemical & Dye Corporation (retired), will receive Honorary AIC Membership at a dinner meeting of the New York Chapter, March 11th, at the Hotel Commodore, New York, N.Y.

He will address the group on "Pursuit of Invention." He is well-qualified to discuss this subject since during his thirty-five years of service with National Aniline, he has accumulated some seventy-five patents and authored numerous scientific papers.

The chairman, Dr. Murray Berdick, will begin the meeting at 8:15 p.m. AIC President, John H. Nair, will make the award of Honorary Membership.

The dinner will be held in the Commodore's Century and South Room at 7:00 p.m., preceded by a 6:00 p.m. reception sponsored by Allied Chemical & Dye Corporation. Reservations ($8.00) may be made with F. A. De Angelis, Foster D. Snell, Inc., 29 W. 15th St., New York 11, N.Y.

Chicago Chapter

Chairman, Dr. Edmund Field
Chairman-elect, Dr. Harold M. Coleman
Vice Chairman, John Krc, Jr.
Secretary, Miss Rose Marie Brunetti, Armour Research Foundation, IIT, 10 W. 33rd St., Chicago 16. Ill.
Treasurer, Dr. C. A. Johnson
National Council Representative, Dr. Johan A. Bjorksten

From the *Newsletter*

The *Newsletter* of the Chicago Chapter emphasizes its Employment Advisory Service:

"The purpose of this service is to make available to each member seeking employment with a particular organization the present or past experiences of other AIC members who are working or have worked for that particular organization. The information exchanged between both parties will only be the concern of the parties involved. This service is intended to help AIC applicants make a sounder choice of intended employer.

"The procedure for using this service is as follows:

"(1) Obtain a request for use of the service from the Secretary. Fill out the form and enclose 50 cents for use of the service.

"(2) The Secretary will send you names of AIC members qualified to advise you about the organization in which you are interested.

"All information exchanged between the applicant and the advisor will be known only to them. There will be no records of contact between applicant and advisor kept by the Secretary."

New Jersey Chapter

Chairman, Dr. Max Bender
Chairman-elect, Dr. William R. Sullivan
Secretary, Dr. John F. Mahoney, 1000 Woodmere Drive, Westfield, N.J.
Treasurer, Dr. Curt Bamberger
National Council Representative, Dr. Cecil L. Brown

Chemistry— Profession or Business

The New Jersey Chapter met, January 15th, with the Science Club of Montclair State Teachers' College, Montcair, N.J. Following a dinner at the Robin Hood Restaurant, Dr. J. Rufus Reid, head

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of the Department of Science of the College, acted as the guide for a tour of the new science facilities at the College. Chester A. Amick spoke briefly on the contribution that the New Jersey Chapter had made in helping to design and further the new laboratories for the College.

The guest speaker at the meeting was Dr. W. O. Baker, vice president of research for the Bell Telephone Laboratories, whose subject was, "Chemistry—Profession or Business." He brought out that scientists and engineers, who are not professors but are working for business are a comparatively new class of professionals. The scientist and engineer can bring values to management by adapting the best principles of a profession to business operation with corresponding rewards in prestige and remuneration.

Washington Chapter

President, Wesley R. Koster
Vice President, John G. Fletcher
Secretary, Frederick S. Magnusson, Bureau of Foreign Commerce, U.S. Dep't of Commerce, Washington 25, D.C.
Treasurer, Albert F. Parks
National Council Representative, Wesley R. Koster

A New Departure

As a change from luncheon meetings, the Washington Chapter scheduled an evening meeting on February 12th at the National Housing Center. Notices to members asked these pertinent questions:

How might your Washington Chapter and the national AIC do a better job?

What types of activity and what specific activities should we currently be undertaking to further the AIC idea?

What should our immediate goals be and how can we move toward them most effectively?

What parts can each of us play, as individuals and as a group, in forwarding these aims?

The meeting program covered:

1. A presentation in outline form of the activities of three societies in the field of professional advancement:

Wesley Koster on AIC Activities.

Dr. Richard Kenyon on A.C.S. activities.

Joseph Gillman on AIChE activities.

2. A moderated open forum discussion of activities which the Chapter might support.

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AIC members who are seeking positions may place notices in this column without charge.

Positions Available

Chemist, as group leader in research and development of additives (plasticizers, stabilizers, etc.) for vinyl and other plastic materials. Ph.D. preferred with some background in the area indicated. Please include resume and salary requirement. Box 21, THE CHEMIST.

Chief Chemist: To take charge of development and technical service laboratory dealing with dispersions of pigments. Salary open. Box 23, THE CHEMIST.

Chemist Available

Chemist-Chemical Engineer. Expert in customs chemistry and tariff problems. Box 20, THE CHEMIST.

Will You Come

March 11, 1957. New York Chapter. Presentation of Honorary AIC Membership to Lawrence H. Flett, formerly AIC president, who will speak on "Pursuit of Invention." Place: Hotel Commodore, New York, N.Y. Dinner 6:00 p.m., preceded by reception sponsored by Allied Chemical & Dye Corp. Tickets at door, $8.50. Advance reservations $8.00. Reservations: F. A. DeAngelis, Foster D. Snell, Inc., 29 W. 15th St., New York 11, N.Y.

March 28, 1957. Western Chapter. Dinner and meeting. Los Angeles, Calif. Presentation of Honorary AIC Membership to Dr. Joel H. Hildebrand. AIC President Nair will present the certificate. For information: Gilbert E. Sinclair, 1116 Hugo Reid Drive, Arcadia, Calif.

April or May (Date to be announced). New Jersey Chapter. Speaker Dr. Detlev W. Bronk, president Rockefeller Institute and National Academy of Sciences. For information, James Abel, Picatinny Arsenal, Dover, N.J.

April 4, 1957. New York Chapter. Young Chemists' Meeting. Program to be announced.

May 1957. (Date to be announced) New Jersey Chapter. Military Park Hotel, Newark, N. J. Cocktails 6 p.m., dinner 7:00 p.m. Annual awards, program and speaker. Student medals will be presented to outstanding students of chemistry in the New Jersey Chapter area.

May 21, 1957. National AIC Council and Board of Directors. Dinner Meeting. Sheraton-Mayflower Hotel, Akron, Ohio.

May 22-24, 1957. Thirty-fourth Annual Meeting. THE AMERICAN INSTITUTE OF CHEMISTS. Sheraton-Mayflower Hotel, Akron, Ohio.

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June 6, 1957. New York Chapter. Honor Scroll Award meeting. Program to be announced.

April 10-11, 1958. Thirty-fifth Annual Meeting. The AMERICAN INSTITUTE OF CHEMISTS. Los Angeles, California. Host: The Western AIC Chapter.

May 14-15, 1959. Thirty-sixth Annual MEETING. THE AMERICAN INSTITUTE OF CHEMISTS, New York, N. Y. Host: The New York and New Jersey Chapters.

For Record: Meetings in February

Feb. 8, 1957. New York Chapter. Joint meeting with the New York Section of the American Chemical Society. Speaker: Dr. Clifford Rassweiler, F.A.I.C.

Feb. 12, 1957. Washington Chapter. Meeting 8:15 p.m., National Housing Center. AIC Forum on Professional Activities. Speakers: Wesley Koster on AIC Activities; Dr. Richard Kenyon on A.C.S. Activities, and Joseph Gillman on AIChE Activities.

Feb. 13, 1957. National AIC Council and Board of Directors, Dinner meeting. The Chemists' Club, 52 East 41st St., New York 17, N.Y.

Feb. 26, 1957. New Jersey Chapter. Plant visit to RCA Laboratories, Princeton, N.J. 2:00 p.m. Business meeting, 5:00 p.m. in lounge of Nassau Club of Princeton. Dinner 6:30 p.m.

"How like an exploration into the unknown by a traveler and his company is a journey into research. The provisioning for the journey, the desire to keep going until the objective is reached, the return journey and reports which will permit others to develop the area explored are so similar for each type of endeavor. Even the results are the same since each hopes to open up an area of use to man. And how similar they are when the traveler and explorer must convince those who sent him that he has really discovered an area that should be commercially developed, and with what trepidity do the sponsors approach this development, unless much, much gold can be shown in the area!"

—Dr. Edgar C. Britton, F.A.I.C. (When he received the 1956 Perkin Medal of the American Section, Society of Chemical Industry.)

To South America: Ralph W. Lamenzo, F.A.I.C., whose address is now, Grace y Cia., Apartado 186, Guayaquil, Ecuador, S.Am. He was formerly with the A. C. Horn Co., Long Island City, N.Y.

Resigned: Dr. Lauren B. Hitchcock, F.A.I.C., as president and managing director of the Air Pollution Foundation, Los Angeles 14, Calif. He returns to private practice as management consultant in industrial research and development.

New Position: For Dr. Joseph W. Sausville, M.A.I.C., who is now chief, Materials Division, Nuclear Power Department, Research Division, Curtiss-Wright Corporation, Quehanna, Penn. He was formerly associate professor of chemistry at the University of Cincinnati.

Chosen: Dr. H. J. Dawe, F.A.I.C. as technical staff consultant of Acheson Industries, Inc., Port Huron, Michigan. He will supervise technical activities at all seven Acheson plants in the U.S., England, and Holland. He was formerly in charge of research and development at Acheson Colloids Co.

Certificate of Merit: Awarded to D. H. Killeffer, F.A.I.C., by the International Council of Industrial Editors, "in recognition of exceptional accomplishment in achievement of purpose, excellence of editorial content and effectiveness of design", as demonstrated in *The Chemical Digest,* which he edits for Foster D. Snell, Inc., New York 11, N.Y.

Assistant Instructorships: And tuition to complete requirements for Master's degree in engineering subjects, offered to qualified college graduates by Newark College of Engineering, 367 High St., Newark 2, N.J.

Appointed: As sales engineer to the Process Equipment Division of U.S. Stoneware Co., Akron, Ohio, Howard H. Friedel.

For Your Library

Medicinal Chemistry

Vol. II. A series of reviews prepared under the auspices of the Division of Medicinal Chemistry of the American Chemical Society. Editors, F. F. Blicke and C. M. Suter. John Wiley & Sons. 1956, 311 *pp.* $10.00.

In this volume, the subjects discussed are: Some Aspects of the Cardiac Glycosides; Synthetic estrogens; Analgesics Arylpiperidine Derivatives; and B-Haloethylamine Adrenergic Blocking Agents.

Like all the books in the series, this one is primarily intended for chemists and pharmacologists concerned with the synthesis and evaluation of new medicinal compounds. Chapter I is by a Swiss, Arthur Stoll, with a supplement by T. L. Johnson, of the Sterling-Winthrop Research Institute, and Chapter III by a member of the staff of Sterling-Winthrop Research Institute. Chapter II is by two chemists of the Upjohn Co., and Chapter IV has two authors connected with the Research and Development Division of Smith, Kline & French Laboratories.

The two largest sections of Chapter I deal with the constitution of the Aglycones and the pharmacology of the Cardiac Glycosides and their therapeutic application. In the supplement to this chapter, the isolation and identification of new glycosides is treated. Chapter II is largely composed of tables and a section has been devoted to biological tests. Methods of synthesis and screening procedures are given special attention in the short chapter on analgesics while structural-activity relationships and tables occupy the largest place in Chapter IV.

—Dr. Frederick A. Hessel, F.A.I.C.

An Introduction to Chemistry

By Howard L. Ritter. John Wiley & Sons. 1955. 649 *pp.* $6.50.

The author, professor of chemistry at Miami University, has prepared a good textbook which for the most part avoids formal mathematics, to lead the freshman student gradually into the logic of chemistry without overtaxing his sometimes inadequate knowledge of algebra.

—Dr. J. A. Steffens, F.A.I.C.

Protective Coatings For Metals

Second Edition. By R. M. Burns & W. W. Bradley. Reinhold Publishing Corp., 1955. 643 *pp.* $12.00.

Burns' famous monograph, which was first published in 1921 and revised 18 years later has now been expanded and a wealth of new material added, bringing to all who have problems of protection the most recent information on this subject.

While not intended as a manual for the production of coatings, the book contains considerable information on that phase of each of the various types of protective preparations as well as their history, development, behavior, uses, the methods by which they are applied, and the particular corrosion reactions which they will help to prevent.

Subject and author indexes add to the value of this volume, which will surely find a place on the shelves of engineers, metallurgists, and chemists who are interested in anti-corrosion.

—Dr. Frederick A. Hessel, F.A.I.C.

Abstracts of the Literature On Semiconducting and Luminescent Materials

By Battelle Memorial Institute. Sponsored by The Electrochemical Society, Inc. John Wiley & Sons, Inc. 1955. 200 *pp.* $5.00.

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Modern Instruments in Chemical Analysis

By Frank M. Biffen and Dr. William Seaman, F.A.I.C. McGraw-Hill. 1956. 333 *pp.* 6″ x 9″. 188 *ill.* $7.50.

Frank M. Biffen is research specialist, Johns-Manville Research Center. Dr. Seaman is head of Analytical Research, Bound Brook Labs., Research Division, American Cyanamid Co. Some of the major instrumental methods covered in this book are: Flame photometry; visual, ultraviolet, and infrared spectrophotometry; Raman spectroscopy; mass spectrometry; X-ray diffraction; polarography; potentiometry; conductometry; coulometry; use of radioactivity. The authors simplify the great mass of material on today's complex chemical instrumentation, without departing from scientific principles. The approach is essentially non-mathematical and contains a minimum of theory.

—Dr. John A. Steffens, F.A.I.C.

The Condensed Chemical Dictionary

Fifth Edition. Revised by Arthur and Elizabeth Rose. Reinhold Publishing Corporation. 1956. 1220 *pp.* $12.50.

This new, enlarged edition of the excellent *Condensed Chemical Dictionary* contains 30,000 definitions, and sections devoted to Safety Information—Warnings and Labels; Transportation of Explosives; Trade-Marks; Numerical and Alphabetical Lists of Manufacturers, and a thumb-index. Many new chemicals and new uses for chemicals are included in this edition.

—VFK

Chemical Books Abroad

Dr. Rudolph Seiden, F.A.I.C.

Wissenschaftliche Verlagsgesellschaft, Stuttgart: *Moderne Arzneimittel,* by B. Helwig; 1956, 772 pp.; DM 68.—Divided into indication groups—which are briefly discussed according to chemical and pharmacological viewpoints—the modern pharmaceutical preparations found on the German market are described with respect to manufacturer, composition, unit sizes, dosage, and contraindications.

Walter de Gruyter & Co., Berlin 35: *Massanalyse,* by G. Jander and K. F. Jahr; 7th ed., 303 pp. (50 ill.); paperbound DM 4.80—Theory and practice of the classical and electrochemical titration methods are discussed concisely by two German university professors.

Hippokrates-Verlag, Stuttgart 1: *Vergiftung durch Schutzmittel,* by W. von Haller; 1956, 136 pp.; paperbound DM 6.80—The dangers of pesticides and other chemical protectants are emphasized and American and other case reports cited to support the request for more effective poison laws. • *Zellulartherapie in Klinik und Praxis,* by W. Kuhn; 1956, 237 pp. (48 ill.); DM 29.60—Fourteen physicians contributed to this symposium on cellular therapy—its fundamentals and its applications in clinic, practice, and research.

Dr. Alfred Huethig Verlag, Heidelberg: *Das grosse Rezeptbuch der Haut und Koerperpflegemittel,* by K. Rotheman; 2nd ed., 600 pp.; DM 38—Since this book was reviewed in the November, 1950, issue of THE CHEMIST, progress in the field of cosmetics and skin therapy has made a revision of this well-organized reference and formula book necessary.

Karl F. Haug Verlag, Ulm/Donau: *Relationspathologie und Diabetes mellitus,* by V. Schaefer; 1956, 166 pp.; DM 13.80.—Based on Gustav Ricker's relation pathology, a new approach to the diabetes problem and therapy is here outlined.

Carl Hanser Verlag, Muenchen 27: *Kunststofftechnisches Woerterbuch,* Vol. 1: *English-German,* by A. M. Wittfoht; 2nd ed., 389 pp., DM 38—A most welcome English-German dictionary containing all the technical terms used in the manufacture, molding, and testing of the modern plastic materials.

Symposia: On flavor research, being carried on by the Flavor Laboratory of Arthur D. Little, Inc., Cambridge, Mass., as a part of the company's 70th anniversary celebration. AIC Fellows, George G. Garnatz, director of the Kroger Food Foundation; Dr. Eric J. Hewitt, vice president of Evans Research and Development Corporation, and Dr. Robert Heggie, vice president of American Chicle Company, spoke at the first symposium on November 19th.

Appointed: Dr. Paul J. Flory, professor of chemistry and acting chairman of the department, Cornell University, Ithaca, N.Y., as executive director of research at Mellon Institute, Pittsburgh 13, Pa.

Announced: By Dr. Foster D. Snell, F.A.I.C., that Prof. Harold Feldman has been engaged to direct an executive development program for thirty selected employees of Foster D. Snell, Inc., New York 11, N. Y.

Transferred: Captain Roland A. Bosee, F. A. I. C., Medical Service Corps, U.S. Navy to the Air Crew Equipment Laboratory at the Naval Air Materiel Center, Philadelphia 12, Pa., where he is assistant superintendent and project co-ordinator. Until recently, he was test director, Naval Parachute Unit, El Centro, Calif.

Disclosed: By Kenneth H. Klipstein, F.A.I.C., general manager of the Research Division, American Cyanamid Company, that attenuated strains of live poliomyelitis virus, produced experimentally by the Company's Lederle Laboratories Division, have been administered successfully by mouth over the past six years to persons varying in age from five days to fifty years.

New Position: For Dr. Bernard Idson, F.A.I.C., who has joined Julius Schmid, Inc., 423-439 W. 55th St., New York 19, N.Y., as director of research of the Pharmaceutical Chemistry Division.

New Publication: *Chemstrand News,* published for employees by The Chemstrand Corporation, Decatur, Alabama.

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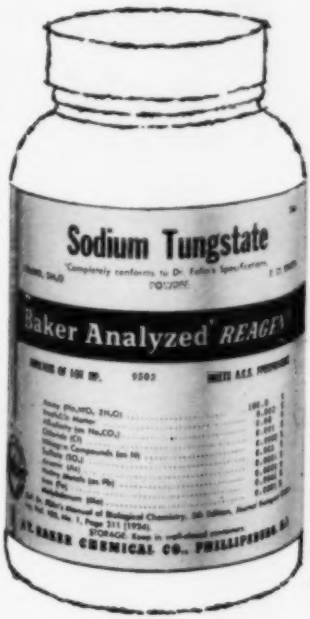

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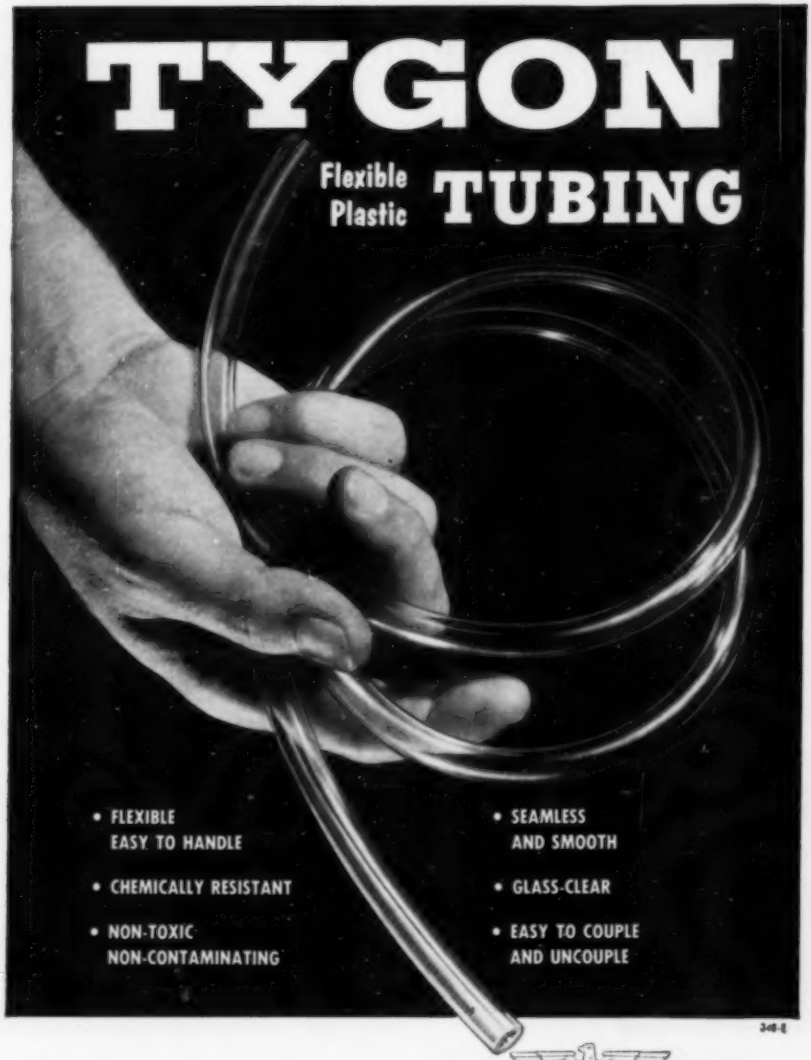

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